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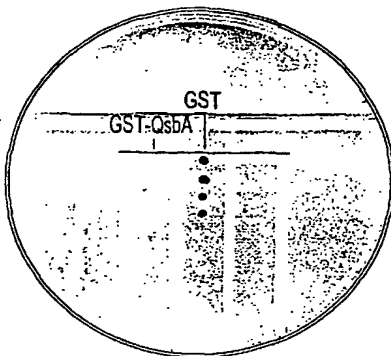
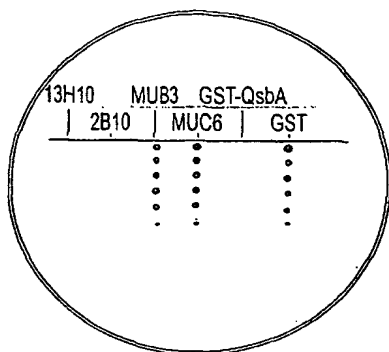
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(54) Title: **RALSTONIA AHL-ACYLASE GENE**

(57) Abstract: This invention provides a gene, *qsba*, which encodes a protein useful for inactivating certain bacterial quorum sensing signal molecules (N-acyl homoserine lactones) which participate in bacterial virulence and biofilm differentiation pathways. This gene was isolated from *Ralstonia sp.*, strain XJ12B. The invention also provides the QsbA protein, which possesses N-acyl homoserine lactone inactivating activity.



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GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent  
(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,  
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## INTERNATIONAL SEARCH REPORT

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## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N9/80 C12N15/57 A01K67/027 A61K38/50

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, EMBL, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE SWISS-PROT 'Online! EBI-SBI; 1 May 2000 (2000-05-01) WHITE ET AL.: "Genome sequence of the radioresistant bacterium Deinococcus radiodurans R1; Science 286:1571-1577 (1999)" retrieved from SWISS-PROT Database accession no. Q9RYQ4 XP002208348 "Aculeacin A acylase from Deinococcus radiodurans R1; 53,316% identity with SEQ ID NO: 2 in 769 aa overlap". abstract  --- -/-	4-6

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International Application No

PCT/SG 00011

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE EMBL 'Online!  EBI; 23 November 1999 (1999-11-23)  WHITE ET AL.: "Genome sequence of the  radioresistant bacterium Deinococcus  radiodurans R1; Science 286:1571-1577  (1999)"  Database accession no. AE001836  XP002208349  "CDS complement (53991..56348): Encoding  Aculeacin A acylase from Deinococcus  radiodurans R1: 62,025% identity with SEQ  ID NO: 1 in 1817 nt overlap".</p> <p>---</p>	2
X	<p>WO 01 98214 A (NOVOZYMES BIOTECH INC)  27 December 2001 (2001-12-27)  the whole document</p>	2,4-6, 10-20
Y	<p>same citations</p>	2,4-6, 10-20
Y	<p>LEADBETTER JARED R ET AL: "Metabolism of  acyl-homoserine lactone quorum-sensing  signals by <i>Variovorax paradoxus</i>."  JOURNAL OF BACTERIOLOGY,  vol. 182, no. 24, December 2000 (2000-12),  pages 6921-6926, XP002208346  ISSN: 0021-9193  cited in the application  abstract; figure 7</p> <p>---</p>	2,4-6, 10,20
Y	<p>LEADBETTER JARED R: "Quieting the raucous  crowd"  NATURE,  vol. 411, 14 June 2001 (2001-06-14), pages  748-749, XP002208347  Figure 7  the whole document</p> <p>---</p>	2,4-6, 10-20
A	<p>DONG YI-HU ET AL: "AiiA, an enzyme that  inactivates the acylhomoserine lactone  quorum-sensing signal and attenuates the  virulence of <i>Erwinia carotovora</i>"  PROCEEDINGS OF THE NATIONAL ACADEMY OF  SCIENCES OF USA, NATIONAL ACADEMY OF  SCIENCE. WASHINGTON, US,  vol. 97, no. 7,  28 March 2000 (2000-03-28), pages  3526-3531, XP002166712  ISSN: 0027-8424  cited in the application  abstract</p> <p>---</p> <p style="text-align: center;">-/--</p>	1-20

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International Application No

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>DONG YI-HU ET AL.: "Quenching quorum-sensing-dependent bacterial infection by an N-acyl homoserine lactonase"</p> <p>NATURE, vol. 411, 14 June 2001 (2001-06-14), pages 813-817, XP001093866 cited in the application abstract</p> <p>-----</p>	1-20

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				02-01-2002 27-12-2001

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